

Previous Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) An LED array formed of a plurality of LEDs, each uniquely colored LED or group of identically colored LEDs comprising a dominant wavelength within the visible spectrum (400 to 750 nm), the plurality of LEDs comprising at least five distinct narrowband colors, ~~in addition to or without white (broadband) LEDs~~ wherein relative luminance values for all LEDs within the LED array operating at full brightness levels results in a composite white-type light that may be plotted on a CIE Chromaticity diagram within McAdam ellipses that are on or adjacent to a Planckian Locus within a predefined correlated color temperature (CCT) range.

2. (Original) The LED array according to claim 1, wherein each LED or group of identically colored LEDs within the LED array is configured for independent control.

3. (Original) The LED array according to claim 1, wherein each LED or group of identically colored LEDs produces colored light with a spectral half-width of less than about 60 nm.

4. (Original) The LED array according to claim 1, wherein each LED or group of identically colored LEDs produces colored light with a spectral half-width of less than about 40 nm.

5. (Original) The LED array according to claim 1, wherein each LED or group of identically colored LEDs produces colored light with a spectral half-width of less than about 30 nm.

6. (Original) The LED array according to claim 1, wherein the plurality of LEDs

LEDs comprises at least the following specified colors and within 25 nm of an associated dominant wavelength: violet 425 nm, blue 465 nm, cyan 500 nm, green 530 nm, lime 555 nm, amber 580 nm, orange 610 nm and red 650 nm.

7. (Original) The LED array according to claim 6, wherein the plurality of LEDs further comprise associated dominant wavelengths within 15 nm of the specified colors and dominant wavelengths.

8. (Original) The LED array according to claim 6, wherein the plurality of LEDs further comprise associated dominant wavelengths within 5 nm of the specified colors and dominant wavelengths.

9. (Original) The LED array according to claim 1, wherein the plurality of LEDs comprises at least the following specified colors and within 25 nm of an associated dominant wavelength: violet 405 nm, indigo 445 nm, blue 480 nm, cyan 510 nm, green 535 nm, lime 555 nm, yellow-amber 575 nm, orange 600 nm, orange-red 630 nm and deep red 665 nm.

10. (Original) The LED array according to claim 9, wherein the plurality of LEDs further comprise associated dominant wavelengths within 15 nm of the specified colors and dominant wavelengths.

11. (Original) The LED array according to claim 9, wherein the plurality of LEDs further comprise associated dominant wavelengths within 5 nm of the specified colors and dominant wavelengths.

12. (Original) The LED array according to claim 1, wherein the plurality of LEDs comprises at least the following specified colors and within 25 nm of an associated dominant wavelength: violet 410 nm, indigo 445 nm, blue 475 nm, cyan 500 nm, aqua

520 nm, green 540 nm, lime 555 nm, yellow 570 nm, amber 590 nm, orange 610 nm, red-orange 635 nm and deep red 665 nm.

13. (Original) The LED array according to claim 12, wherein the plurality of LEDs further comprise associated dominant wavelengths within 15 nm of the specified colors and dominant wavelengths.

14. (Original) The LED array according to claim 12, wherein the plurality of LEDs further comprise associated dominant wavelengths within 5 nm of the specified colors and dominant wavelengths.

15. (Original) The LED array according to claim 1, wherein each dominant wavelength is separated from its nearest neighbor on either side by not more than about 40 nm.

16. (Original) The LED array according to claim 1, wherein each dominant wavelength is separated from its nearest neighbor on either side by not more than about 30 nm.

17. (Original) The LED array according to claim 1, wherein each dominant wavelength is separated from its nearest neighbor on either side by not more than about 20 nm.

18. (Original) The LED array according to claim 1, wherein separation between the dominant wavelengths gradually increases away from either side of approximately 555 nm.

19. (Original) The LED array according to claim 1, further comprising LEDs with a dominant wavelength in the near-ultra-violet region defined from about 300 nm to about 400 nm.

20. (Original) The LED array according to claim 1, wherein the plurality of LEDs number less than or equal to 100 LEDs.

21. (Original) The LED array according to claim 1, wherein the plurality of LEDs number less than or equal to 64 LEDs.

22. (Original) The LED array according to claim 1, wherein the plurality of LEDs number less than or equal to 36 LEDs.

23. (Original) The LED array according to claim 1, wherein the plurality of LEDs number less than or equal to 16 LEDs.

24. (Original) The LED array according to claim 1, wherein each of the plurality of LEDs comprises at least 0.25 Watts of power at full brightness.

25. (Original) The LED array according to claim 1, wherein each of the plurality of LEDs comprises at least 0.5 Watts of power at full brightness.

26. (Original) The LED array according to claim 1, wherein each of the plurality of LEDs comprises at least 1.0 Watts of power at full brightness.

27. (Previously Amended) The LED array according to claim 1, wherein an area enclosed by plotting an output of each LED on a CIE Chromaticity diagram as a point and connecting the points covers at least 75% of a total area defined within a curve of spectrally pure colors and an alychne of purple colors.

28. (Previously Amended) The LED array according to claim 1, wherein an area enclosed by plotting an output of each LED on a CIE Chromaticity diagram as a point and connecting the points covers at least 85% of a total area defined within a curve of

of spectrally pure colors and an alychne of purple colors.

29. (Previously Amended) The LED array according to claim 1, wherein an area enclosed by plotting an output of each LED on a CIE Chromaticity diagram as a point and connecting the points covers at least 95% of a total area defined within a curve of spectrally pure colors and an alychne of purple colors.

30. (Canceled)

31. (Currently Amended) The LED array according to claim ~~30~~1, wherein the predefined CCT range comprises between about 1500 K and about 25,000 K.

32. (Currently Amended) The LED array according to claim ~~30~~1, wherein the predefined CCT range comprises between about 3000 K and about 10,000 K.

33. (Currently Amended) The LED array according to claim ~~30~~1, wherein the predefined CCT range comprises between about 4500 K and about 7500 K.

34. (Currently Amended) The LED array according to claim ~~30~~1, wherein the predefined CCT range comprises between about 5500 K and about 6500 K.

35-47. (Cancelled)

48. (Original) The LED array according to claim 1, wherein a correlation coefficient between a spectral power distribution of the LED array and a spectral power distribution of midday sunlight comprises at least 0.70 over the visible spectrum from approximately 400 nm to approximately 750 nm.

49. (Original) The LED array according to claim 1, wherein a correlation coefficient between a spectral power distribution of the LED array and a spectral power

distribution of midday sunlight comprises at least 0.75 over the visible spectrum from approximately 400 nm to approximately 750 nm.

50. (Original) The LED array according to claim 1, wherein a correlation coefficient between a spectral power distribution of the LED array and a spectral power distribution of midday sunlight comprises at least 0.80 over the visible spectrum from approximately 400 nm to approximately 750 nm.

51. (Original) The LED array according to claim 1, wherein a correlation coefficient between a spectral power distribution of the LED array and a spectral power distribution of midday sunlight comprises at least 0.85 over the visible spectrum from approximately 400 nm to approximately 750 nm.

52. (Original) The LED array according to claim 1, wherein a correlation coefficient between a spectral power distribution of the LED array and a spectral power distribution of midday sunlight comprises at least 0.90 over the visible spectrum from approximately 400 nm to approximately 750 nm.

53. (Original) The LED array according to claim 1, wherein a correlation coefficient between a spectral power distribution of the LED array and a spectral power distribution of midday sunlight comprises at least 0.95 over the visible spectrum from approximately 400 nm to approximately 750 nm.